

## Weaber Plain upper catchment erosion works continues

Works have recommenced in the upper catchment of Weaber Plains. Last wet the 5 trial structures managed to trap large amounts of sediment yet they were also battered and damaged by the high velocity flows. Working up higher in the catchment should help to slow these flows earlier on so that the force of the water is lessened downstream.

Last wet season the rock dump proved to be the most cost effective and efficient. Another 5 of these rock dumps have been constructed with a further 7 currently underway. Following the completion of these, work will commence in the main stream channel to repair the structures from last year as well as install additional structures. These new structures will be monitored and assessed over the wet season.

A field visit for the community and interested parties will be conducted before and after the wet to see the before and after effects of rainfall and flow. A fire management plan will also be written over this time for implementation in the dry.



Geo textile is pinned to the bottom of the creek and covered with rocks to help slow water flows and reduce the loss of soil.

## Cumbungi increasing in Lily Creek

Cumbungi is a native plant to the Ord River that has proliferated in the permanent, slow flowing and shallow waters of Lily Creek since the building of the dam and water levels ceased to change significantly on the lake.

Its tendency to rapidly spread and the need for management was noted to be of concern in the Lake Kununurra Foreshore Draft Management Plan back in 1987 and then again in the Draft Management Plan for Lake Kununurra in 1995.

In a new study of the vegetation surrounding the lower sections of the lake cumbungi in Lily Creek lagoon has found to have increased to the point that 53% of the lagoon's 135 hectares was covered in cumbungi in 2006.. This area includes almost the entire margin of the lagoon, the only exception was where it has been mechanically removed in areas such as Celebrity Tree Park.

As part of the new study water depths were measured across and up the creek in areas where it was still accessible by boat. As cumbungi has difficulty colonising water in excess of two metres deep it was concluded that the area of the lagoon close to the 'S' bends had about reached its full growth potential.

However the other end of the lagoon from Celebrity Tree Park to Messmate Way was particularly shallow with the majority being less than two metres in depth. Based on this information there is a concern that the cumbungi has the potential to cover this area completely if not appropriately controlled.

Cumbungi is a declared weed in some parts of Australia due to its ability to form dense monocultures that reduce habitat and the holding capacity and access to dams and waterways. However it is a natural part of the Australian wetlands and has a number of important attributes, which deserve recognition, including stabilising banks to prevent erosion, utilising nutrients and acting as a rubbish trap. In Lily Creek cumbungi alone restricted the growth of salvinia until it was discovered in 2000.

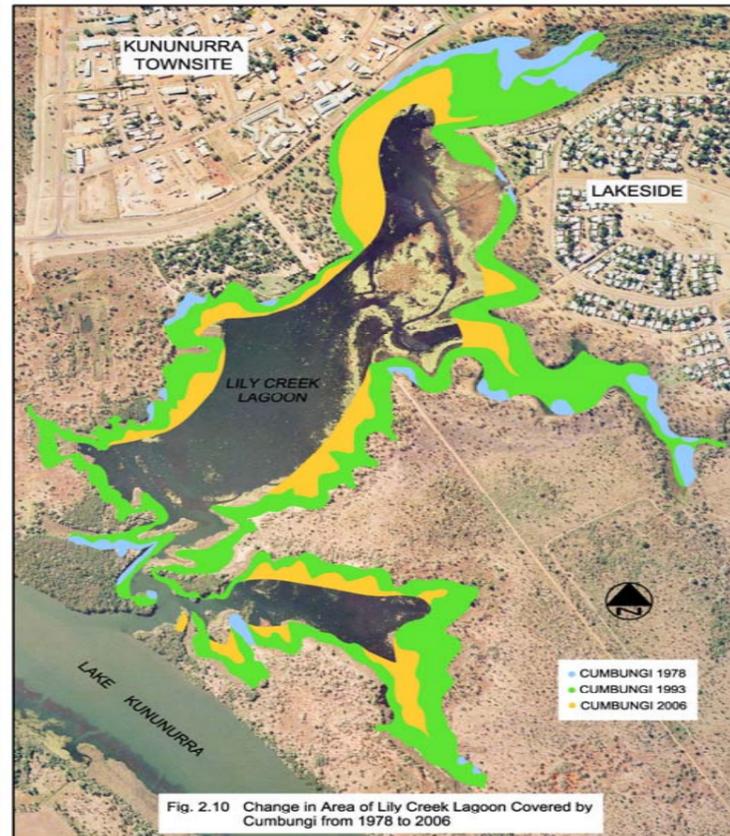


Fig. 2.10 Change in Area of Lily Creek Lagoon Covered by Cumbungi from 1978 to 2006.

## Funding acknowledgments

**Weed Control on Lake Kununurra** – National Action Plan for Salinity and Water Quality

**Erosion Sites** – National Action Plan for Salinity and Water Quality and National Landcare Program.

**Neem control** – Save Our Species Initiative and Envirofund.

**Salvinia Control** – National Action Plan for Salinity and Water Quality and National Heritage Trust.

**Electromagnetic Survey** – National Action Plan for Salinity and Water Quality

**Litter Audit** – Zero Waste

**Cumbungi Management** – National Action Plan for Salinity and Water Quality



# Ord Land and Water Newsletter

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## Weeds beware!



Volunteers weeding one of the sites on Lake Kununurra

## Weed Control on Lake Kununurra

After four years of weed control on Lake Kununurra some progress is now visible. OLV has been concentrating on nine sites up river from Crossing Falls covering over 1400ha. The largest site situated on Maxwell Plain is predominantly neem of which 25 ha along the bank is rapidly becoming a monoculture.

Weed densities vary over the length of the lake with an area between the Kununurra Dam and where the cliff line first touches the water having the heaviest infestations. The second area upstream to Carlton Gorge is only lightly infested with weeds but they have the potential to increase significantly if not controlled now. This is the area OLV has been spending much of its effort to date. The last section above Carlton Gorge has the lightest weed pressure with the exception of a small section of land close to the Ord Dam.

The focus is on weeds such as neem, leucaena; moringa and date palm that are only found in a few places but if left alone would in time take over large areas of native bush.

The control strategy involves several phases with the initial effort focusing on killing all mature plants that are capable of making seed. This is followed by regular monitoring visits that aim to kill off smaller plants that were left or since germinated. For example an initial visit to a patch of leucaena on the Coolimon Creek site took over 15 hours to kill hundreds of mature trees and seedlings. Four years later and on the last visit only six small plants were found and killed in less than 15 minutes. The site won't need to be revisited now for 12 months.

Lake Kununurra is a wonderful asset to Kununurra for recreational and commercial purposes. Managing weeds is one way of maintaining that asset for future use.

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## IN THIS ISSUE

- Litter
- Erosion and more erosion
- Weeds
- Mapping the soil
- Cumbungi

Merry  
Christmas



## Salvinia progress

A major step in the control of Salvinia in Lily Creek saw the construction of a second earthen groyne and a further two new booms placed around the site.

Only very small patches are now being found, with all the known infestations being either buried under a metre of soil, or dragged up out of the creek and deposited on dry land to die off.

The oncoming wet season will test the effectiveness of this control activity which is when salvinia tends to grow much more quickly and so any left in the area will quickly become obvious.

## Erosion Banks Installed

As an extension to the erosion workshops OLW has been running across the catchment a couple of demonstration sites are currently being established. The first site is situated on red loamy soil typical of pastoral land south and west of Lake Argyle, whilst the second site is situated on sandier soils just a few kilometres north of Kununurra.

The southern site was completed in July and consists of a number of banks placed across an actively eroding gully system. It is hoped that the banks will serve as a silt trap to reduce erosion by slowing the flow of water off the hills. A number of field days are being planned around the site to demonstrate effective erosion control to land managers both before and after the wet season. The work has been filmed in order to produce another short educational DVD in the current series of erosion rehabilitation techniques.

Work is due to start on the northern site prior to the wet and will be mainly a series of erosion banks placed across a fire-break that has rapidly scoured out over the past couple of seasons. The Shire has agreed to maintain the site once OLW has done the initial work. The concept for this work came from a workshop held on the site in June 2007.



Filming of erosion banks being built on the pastoral site



LIDAR to acquire the digital elevation map.



Story from page 1: Two new booms plus the original spanning of the salvinia site in Lily Creek

## What lies beneath us?

When they hear the word 'map' most people think of something which provides a visual representation of a specific area; something that shows what we can see at ground level. But what about mapping below ground level?

The Ord Irrigation Cooperative (OIC) is undertaking an innovative and exciting project that will result in a three dimensional map of the Ord River Irrigation Area (ORIA) to a depth of up to 40 metres below the soil surface.

By understanding the different soil types such as clays and sand, as well as how these link to aquifers and their quality, OIC will have a much better understanding of the potential salinity risk in the ORIA. This project will also provide valuable information to help OIC and irrigation farmers manage the irrigation system to prevent salinity from ever occurring.

To map underneath the soil we actually need to fly over it, and by using new technology called airborne electromagnetics which use transmitters and receivers to detect conductivity changes in the soil below, we can translate this in to different soil types and groundwater characteristics including quality and distance from the soil surface.

Whilst most of this work is expected to occur in May/June 2008 the first stage of the project has just been completed. An airborne laser scanner has flown over the area and collected data that will result in a much better understanding of the surface topography, which will be invaluable when trying to understand what is happening below the surface.

This project is being funded by the Australian and Western Australian National Action Plan for Salinity and Water Quality through the Ord Catchment Reference Group. More information can be obtained from the Project Manager – Anna Price. (anna@brolgasenvironment.com.au).

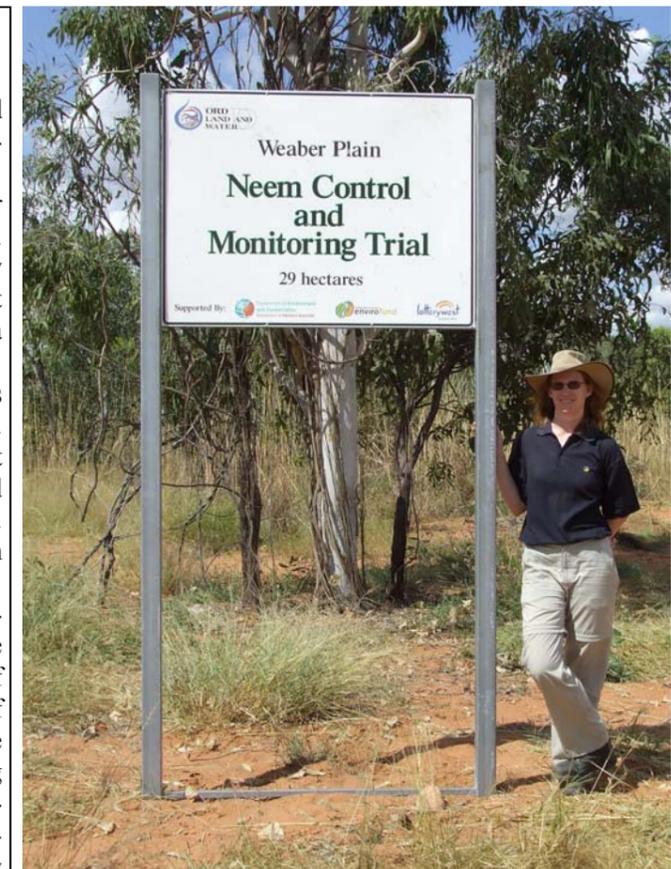
## Neem second time through

With just over 5,000 ha of neems controlled out of an estimated 7,200ha work has started on evaluating the success rate of the initial work and how much re-infestation could be expected.

Three sites have been re-weeded: the monitoring sites on Weaber Plain and Lake Kununurra and another site out at Cave Springs. The 160ha Cave Springs site was classed a medium to low density infestation. Nearly all the seeder trees were removed on the first pass which reduced the total population by 88% to just less than a total of 700 trees that were found on the second run through.

Both the Weaber Plain and Lake Kununurra sites were classed as very heavy to medium density infestations (over 1,000 trees/ha). The Weaber site population was only reduced by 24% in the first effort with there being some re-infestation from neighbouring land that couldn't be treated until after fruit set and seed distribution. With a buffer now in place we expect to effect a similar reduction to the Cave Springs site between now and next year.

The Lake Kununurra site had the added constraint of dense surrounding vegetation so there was little measurable decrease in the weed population achieved over the year. A fire in October of 2006 did assist with the 2007 work by reducing the amount of vegetation on the site. Importantly in the initial work most of the seeder trees were killed meaning the 2007 work involved finding immature plants that were large enough to spot easily and eradicate. It is expected that this site will also see a significant reduction of trees found in the following year due to the preliminary work already carried out.



State weed coordinator for DEC in town to view the progress of the neem project. DEC is currently funding much of the work being done.



Sorting through the litter bin at Kelly's Knob

## Litter Audit

OLW has received funding from the Waste Management Board with the aim of promoting a reduction of litter in our community and to identify opportunities for both waste reduction and recycling to reduce waste in public places.

As part of this project OLW Board members recently conducted a waste audit at Swim Beach, Kelly's Knob, Celebrity Tree Park, the Post Office surrounds and a stretch of the Great Northern Highway between Messmate way and Lakeside.

The contents of sulo bins and litter found on site were sorted into eight basic waste streams: these were hard plastics, glass, cans, aluminium foil, textiles, paper/cardboard and 'other materials' such as car parts etc. Nearly half the waste consisted of either hard plastic items such as food containers or paper and cardboard material, whilst most waste was either found along the roadside of the highway or in bins at Celebrity Tree Park.

The cleanest sites were Kelly's Knob and the Post Office and textiles and 'other materials' were the categories of waste found least.

One positive observation was the number of people ensuring they removed dog waste from the ground and placed it into bins at Celebrity Tree Park.

The information collected by the Board will be used by OLW in partnership with SWEK to progress an anti litter campaign. Both Clean Up Australia and Leave No Trace are very interested in this project.

## Last Laugh

A Texan farmer comes to Kununurra while on vacation and gets talking to a local farmer. The Aussie shows off his melon crop and the Texan says, "Oh! We have melon crops that are at least twice as large".

Then they go for a drive out towards the Keep River to see some station cattle. The Texan immediately says, " We have longhorns that are at least twice as large as your cows".

The conversation has almost died when the Texan sees a mob of kangaroos hopping across plain. He asked, "And what are those"? The Aussie replies with an incredulous look, "Don't you have any grasshoppers in Texas"?